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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,103	08/10/2006	Luca Toncelli	SAIC 22.706 (100788-00120)	5787
26304 7590 04/06/2009 KATTEN MUCHIN ROSENMAN LLP 575 MADISON AVENUE NEW YORK, NY 10022-2585			EXAMINER KENNEDY, TIMOTHY J	
			ART UNIT 1791	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,103	Applicant(s) TONCELLI, LUCA	
	Examiner TIMOTHY KENNEDY	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 09 February 2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,2,4,5 and 9-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) 1,2,4,5 and 9-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>8/31/06</u> | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. By way of the amendment filed 2/9/2009: claims 1, 2, 4, and 5 are amended, claims 3 and 6-8 are cancelled, and claims 9-14 are new.

Election/Restrictions

2. Applicant's election without traverse of Group I (claims 1, 2, 4 and 5) in the reply filed on 2/9/2009 is acknowledged.

Information Disclosure Statement

3. The listing of references in the specification is not a proper information disclosure statement, page 3 lines 7-9: Italian Patent Application No. TV2003A000134 which corresponds to WO 2005/030474). 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609.04(a) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Objections

4. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

5. Claim 11 is a letter for letter copy of claim 10.

Claim Rejections - 35 USC § 112

6. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

7. Claims 1, 2, 4, and 5 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

8. Regarding claim 1:

9. A broad range or limitation together with a narrow range or limitation that falls within the broad range or limitation (in the same claim) is considered indefinite, since the resulting claim does not clearly set forth the metes and bounds of the patent protection desired. See MPEP § 2173.05(c). Note the explanation given by the Board of Patent Appeals and Interferences in *Ex parte Wu*, 10 USPQ2d 2031, 2033 (Bd. Pat. App. & Inter. 1989), as to where broad language is followed by "such as" and then narrow language. The Board stated that this can render a claim indefinite by raising a question or doubt as to whether the feature introduced by such language is (a) merely exemplary of the remainder of the claim, and therefore not required, or (b) a required feature of the claims. Note also, for example, the decisions of *Ex parte Steigewald*, 131 USPQ 74 (Bd. App. 1961); *Ex parte Hall*, 83 USPQ 38 (Bd. App. 1948); and *Ex parte Hasche*, 86 USPQ 481 (Bd. App. 1949). In the present instance, claim 1 recites the broad recitation "less than 10°C", and the claim also recites "less than 5°C" which is the narrower statement of the range/limitation.

10. Regarding claim 2:

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11. Claim 2 is indefinite since it is not understood as to what the temperature is actually less than. The Examiner is interpreting this to mean "...less than 5°C, below the catalysis temperature of the binder."

12. Claims 10 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

13. Regarding claim 10:

14. Claim 10 is indefinite since it is not understood as to what the temperature is actually less than. When viewed in light of claim 9, claim 10 has no meaning. Since in claim 9 it states "...preheat the compacted sheet to a temperature where catalysis of the binder starts." Thus the preheating step laid out in claim 9 raises the temperature to the catalysis temperature, and not less as in claim 1. Clarification is requested.

15. For examination purposes claim 10 is to be read in the same manner as claim 2: "...less than 10°C, below the catalysis temperature of the binder."

Claim Rejections - 35 USC § 103

16. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

17. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

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1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

18. Claims 1, 2, and 4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli (EP 0786325, already of record), in view of (Brown (U.S. Patent 2,388,824) and Hedstrom (DE 2309183, using Derwent English abstract). Regarding claim 1, Toncelli teaches:

19. A first step involving preparation of a mix by mixing together stone materials of predetermined particle size with a binder consisting of organic resins (Figure 1 part 26, Abstract, column 5, lines 18-20)

20. A second step involving distribution of said mix inside a tray mould so as to form a layer of mix (Figure 1 part 30, Abstract, column 5 lines 18-23)

21. A third step involving vacuum vibro-compaction in order to obtain a compacted sheet (column 6, lines 7-14)

22. A final step involving hardening or catalysis of the binder by means of heating ovens in order to obtain the finished products (Figure 1 part F and column 6, lines 15-21)

23. Toncelli does not teach:

24. A dielectric preheating step in between the third and final steps. The preheating involving radio waves that have a frequency of 300 MHz or less, and heating the compacted sheet to a temperature less than 10°C below the catalysis temperature of the binder.

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25. Regarding dielectric preheating; in the same field of endeavor Brown teaches preheating, using a high frequency electric field, resins before curing to ensure that the entirety of the mass is at a certain temperature so that the proper cure state can be achieved. (page 1, lines 20-41)

26. Regarding the preheating temperature; in the same field of endeavor Hedstrom teaches preheating curable glue to a temperature below its curing temperature so as to remove trapped solvents in the glue, at a temperature of 20-10°C. This shortens the total processing time, thus saving money.

27. However Brown is silent as to what frequency is used for the preheating, and Hedstrom is silent as to the curing temperature of the glue. But both of these variables are seen as result effective variables. Depending on the preheating temperature needed and the type of material being heated one having ordinary skill in the art would be able to pick the proper frequency, knowing based on Brown the importance of using high frequency waves to preheat a curable material. Finally, depending on the type of binder and catalyst that is used in the mixture, one having ordinary skill in the art would be able to determine a temperature below the curing temperature so as to improve the overall process, as shown by Hedstrom.

28. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine a proper frequency and temperature for the preheating step as motivated by Brown and Hedstrom, using the Toncelli process, since these variables are seen as result effective variables in the claimed process. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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29. The Examiner would like to note that the wherein clause regarding the preheating step has been given full weight, since it gives meaning to the claim as a whole.

30. Regarding claim 2:

31. See remarks regarding claim 1, and the preheating to a temperature below the curing temperature per Hedstrom.

32. Regarding claim 4:

33. Wherein the end of said intermediate preheating step, the compacted sheet reaches a temperature lower than the temperature at which catalysis of the binder starts and preferably ranging of between 75°C and 78°C.

34. See remarks regarding claim 1, and the preheating to a temperature below the curing temperature per Hedstrom.

35. This temperature is a result effective variable, due to the fact that the stated temperature is entirely dependent on the type of binder used in the mixture, and would have been well within the ordinary skill in the art to determine such temperature based on the materials used in the process.

36. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli, Brown, and Hedstrom as applied to claim 1 above, and further in view of Toncelli (WO 03/089189, herein after referred to as Toncelli WO). Regarding claim 5, Toncelli, Brown, and Hedstrom do not teach:

37. A mix which contains granulates of the expanded type.

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38. In the same field of endeavor Toncelli WO teaches the use of expanded clay in the mixture (page 6, lines 16-21).

39. It would have been obvious to one having ordinary skill in the art at the time the invention was made to use the expanded granualtes as taught by Toncelli WO, using the previous process of Toncelli, Brown, and Hedstrom, since doing so would allow for good vibration damping capacity and lower the weight of the final product (page 6, lines 20-21)

40. Claims 9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli (EP 0786325, already of record), in view of (Brown (U.S. Patent 2,388,824). Regarding claim 1, Toncelli teaches:

41. Mixing stone materials of predetermined particle size with a binder consisting of organic resins to produce a mix (Figure 1 part 26, Abstract, column 5, lines 18-20)

42. Distributing the mix inside a tray mould to form a mix layer (Figure 1 part 30, Abstract, column 5 lines 18-23)

43. Vacuum vibro-compacting the mix layer to obtain a compacted sheet (column 6, lines 7-14)

44. Hardening the binder by heating in an oven in order to obtain the finished products (Figure 1 part F and column 6, lines 15-21)

45. Toncelli does not teach:

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46. Using electromagnetic radiofrequency waves having a frequency of less than 300 MHz to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts

47. In the same field of endeavor Brown teaches preheating, using a high frequency electric field, resins before curing to ensure that the entirety of the mass is at a certain temperature so that the proper cure state can be achieved (page 1, lines 20-41). Brown also teaches that the frequency and intensity of the dielectric preheating should be determined by the nature and bulk of the material, as well as allowing enough time for the temperature to be raised to the curing point (page 2, lines 14-25)

48. However Brown is silent as to what frequency is used for the preheating, but the frequency is seen as a result effective variable. Depending on the preheating temperature needed and the type of material being heated one having ordinary skill in the art would be able to pick the proper frequency, knowing based on Brown the importance of using high frequency waves to preheat a curable material.

49. Therefore it would have been obvious to one having ordinary skill in the art at the time the invention was made to determine a proper frequency and temperature as taught by Brown, using the Toncelli process, since the frequency variable is seen as result effective variable in the claimed process. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

50. Regarding claim 12, Toncelli teaches:

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51. Mixing in a first station stone materials of predetermined particle size with a binder consisting of organic resins to produce a mix (Figure 1 part 26, Abstract, column 5, lines 18-20)

52. Distributing in a second station the mix inside a tray mould to form a mix layer (Figure 1 part 30, Abstract, column 5 lines 18-23)

53. Vacuum vibro-compacting in a third station the mix layer to obtain a compacted sheet (column 6, lines 7-14)

54. Hardening in a final station the binder by heating in an oven in order to obtain the finished products (Figure 1 part F and column 6, lines 15-21)

55. Toncelli does not teach:

56. Using electromagnetic radiofrequency waves having a frequency of less than 300 MHz in an intermediate station to dielectrically preheat the compacted sheet to a temperature where catalysis of the binder starts

57. As seen with regards to claim 9, the combination of Toncelli and Brown teach the claimed preheating step.

58. With regards to its location, one having ordinary skill in the art would know that the preheating station would be placed between the vacuum vibro-compaction and oven stations.

59. Regarding claim 13:

60. See remarks regarding claim 12.

61. Regarding claim 14, Brown for the previously stated reasons teach:

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62. Step (c) is performed using means to generate electromagnetic waves having a frequency of between 25 and 35 MHz in the intermediate station.

63. See remarks regarding the Brown reference with regards to claim 1, 9, and 12.

64. Claims 10 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Toncelli and Brown as applied to claim 9 above, and further in view of Hedstrom.

65. Regarding claims 10 and 11:

66. The method of claim 9, wherein the temperature comprises less than 10°C

67. See remarks regarding the Hedstrom reference in the discussion of claim 1.

Conclusion

68. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

69. U.S. PGPub 2004/0124565: Radio frequency oven

70. JP 73019708: preheating temperature concept

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TIMOTHY KENNEDY whose telephone number is (571) 270-7068. The examiner can normally be reached on Monday to Friday 9:00am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Joseph Del Sole can be reached on (571) 272-1130. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

tjk

/Joseph S. Del Sole/
Supervisory Patent Examiner, Art Unit 1791